WHAT IS CLAIMED IS:

1. A composition comprising at least 1 microgram of a purified nondenatured gp35 protein, with the proviso that said composition is not a gel.

2. A purified bacteriophage T4 gp35 protein that is not contained in a gel.

3. A purified protein comprising the amino acid sequence depicted in Figure 2 (SEQ ID NO:2) with one or more conservative substitutions relative to said sequence.

4. A protein comprising the amino acid sequence depicted in Figure 2 (SEQ ID NO:2) from amino acid residues 1 to 93 with one or more conservative substitutions relative to the sequence in Figure 2.

5. A purified protein encoded by a nucleic acid hybridizable to a DNA having a nucleotide sequence consisting of the coding region of SEQ ID NO:1, with the proviso that the protein is not a native gp35 protein.

6. A purified protein comprising an amino acid sequence of 100 amino acids that has at least 60% identity to a gp35 protein having the amino acid sequence depicted in Figure 2 (SEQ ID NO:2).

7. A purified protein comprising at least 8 contiguous amino acids of the gp35 protein sequence depicted in Figure 2 (SEQ ID NO:2) from amino acids numbers 1 to 24, and which displays one or more functional activities of a gp35 protein.

8. The protein of claim 7 which is able to be bound by an antibody directed against a gp35 protein.

9. The protein of claim 7 which has only conservative substitutions relative to the sequence in Figure 2 (SEQ ID NO:2).

10. A molecule comprising the protein of claim 7.

11. The protein of claim 6 which specifically binds with the P34 protein oligomer of bacteriophage T4.

12. A purified fragment of the protein of claim 4, which comprises at least 8 contiguous amino acids of the gp35 protein sequence depicted in Figure 2 (SEQ ID NO:2) from amino acids numbers 1 to 24, and which displays one or more functional activities of a gp35 protein.

13. The fragment of claim 12 which is able to be bound by an antibody directed against a gp35 protein.

14. A purified protein variant of a gp35 protein of bacteriophage T4, that is able to be bound by an antibody directed against a gp35 protein, wherein the interaction of said variant with the P36 protein oligomer of bacteriophage T4 is unstable at temperatures between about 40°C and about 60°C.

15. A purified protein variant of a gp35 protein of bacteriophage T4, that is able to be bound by an antibody directed against a gp35 protein, wherein the interaction of said variant with the P34 protein oligomer of bacteriophage T4 is unstable at temperatures between about 40°C and about 60°C.

16. A purified protein variant of a gp35 protein of bacteriophage T4, that (a) is able to be bound by an antibody directed against a gp35 protein, and (b) is conjugated to a group that confers the ability of the variant to bind a ligand.

17. The variant of claim 16, wherein said ligand is selected from the group consisting of avidin, immunoglobulin, and a divalent metal ion.

18. A purified molecule comprising a bacteriophage T4 gp35 protein fragment, wherein said fragment consists of at least the amino acid sequence depicted in Figure 2

(SEQ ID NO:2) from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-93, 57-64, 66-79 or 81-93.

19. A purified molecule comprising the amino acid sequence depicted in Figure 2 (SEQ ID NO:2) from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-93, 57-64, 66-79 or 81-93, with one or more conservative substitutions relative to said sequence.

20. A purified molecule comprising an amino acid sequence having at least 30% identity to amino acids numbers 57 to 93 in Figure 2 (SEQ ID NO:2) over a 36 amino acid sequence.

21. A purified protein having at least 60% identity to amino acids numbers 57 to 93 in Figure 2 (SEQ ID NO:2) over a 36 amino acid sequence.

22. A purified protein comprising at least a functionally active portion of the amino acid sequence in Figure 2 (SEQ ID NO:2) from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-64, 66-79, or 81-93.

23. A purified molecule comprising an amino acid sequence having at least 60% identity to amino acids numbers 1 to 100 in Figure 2 (SEQ ID NO:2) over a 100 amino acid sequence.

24. The purified fragment of claim 7, wherein said fragment lacks at least 10 contiguous amino acids of the sequence depicted in Figure 2 (SEQ ID NO:2).

25. A purified nucleic acid, comprising a nucleotide sequence encoding a gp35 protein having the amino acid sequence depicted in Figure 2 (SEQ ID NO: 2), operably linked to a heterologous promoter that controls expression of the nucleotide sequence.

26. A purified nucleic acid, comprising a nucleotide sequence encoding a gp35 protein having the amino acid sequence depicted in Figure 2 (SEQ ID NO: 2), contiguous with a sequence of at least 10 nucleotides that is not of bacteriophage T4.

27. The purified nucleic acid of claim 25, further comprising nucleotide sequences encoding gp36, gp37 and gp57 proteins, respectively, operably linked to said promoter.

28. The purified nucleic acid of claim 25, in which the nucleic acid is DNA.

29. The purified nucleic acid of claim 25, in which the nucleic acid is RNA.

30. A purified nucleic acid comprising a nucleotide sequence absolutely complementary to a nucleotide sequence encoding a gp35 protein having the amino acid sequence depicted in Figure 2 (SEQ ID NO:2), contiguous with a sequence of at least 10 nucleotides that is not of bacteriophage T4.

31. A purified nucleic acid comprising at least 850 contiguous nucleotides of a *gp35* DNA sequence, with the proviso that the nucleic acid does not contain a bacteriophage T4 promoter.

32. A purified nucleic acid, comprising a nucleotide sequence encoding a gp35 protein consisting of at least the amino acid sequence shown in Figure 2 from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-93, 57-64, 66-79, or 81-93.

33. A purified nucleic acid comprising a nucleotide sequence encoding a protein consisting of at least the amino acid sequence shown in Figure 2 (SEQ ID NO:2) from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-93, 57-64, 66-79 or 81-93, with one or more conservative substitutions relative to said sequence.

34. A purified nucleic acid, comprising the nucleotide sequence depicted in Figure 2 (SEQ ID NO:1) from nucleotide numbers 1 to 1,116, wherein said sequence is contiguous to a 3′ termination codon.

35. A purified nucleic acid, comprising a nucleotide sequence encoding a protein having at least 30% identity to amino acids numbers 57 to 93 in Figure 2 (SEQ ID NO:2) over a 36 amino acid sequence.

36. A purified nucleic acid, comprising a nucleotide sequence encoding a protein containing at least a functionally active portion of the amino acid sequence in Figure 2 from amino acids numbers 1-17, 1-56, 1-78, 1-93, 8-17, 57-64, 66-79, or 81-93.

37. A purified nucleic acid, comprising a nucleotide sequence encoding the protein of claim 12.

38. The purified nucleic acid of claim 37, wherein said protein is missing at least 10 contiguous amino acids of the sequence depicted in Figure 2 (SEQ ID NO:2).

39. A nucleic acid vector comprising the nucleic acid of claim 26 or 33.

40. An expression vector comprising the nucleic acid of claim 33 operably linked to a heterologous promoter that controls expression of the nucleotide sequence in a host cell.

41. A host cell that contains the nucleic acid of claim 25.

42. A host cell that contains the nucleic acid of claim 33.

43. A host cell that contains the nucleic acid of claim 33 operably linked to a heterologous promoter that controls expression of the nucleotide sequence in the host cell.

44. A method of producing a protein comprising growing the host cell of claim 41 such that the gp35 protein is expressed by the cell, and recovering the expressed protein.

45. A method of producing a protein comprising growing the host cell of claim 43 such that the encoded protein is expressed by the cell, and recovering the expressed protein.

46. The product of the method of claim 44.

47. The product of the method of claim 45.

48. A kit comprising in one or more containers a pair of nucleic acid primers capable of priming amplification of at least a portion of a gp35 gene, in which the 5′ primer is upstream of or comprising a sequence encoding the N-terminus of a gp35 protein.